

Frankincense oil derived from *Boswellia carteri* induces bladder tumor cell specific cytotoxicity

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Frankincense oil - a potential treatment option for bladder cancer

An enriched extract of the Somalian Frankincense herb *Boswellia carteri* has been shown to kill off bladder cancer cells. Frankincense oil is prepared from aromatic hardened gum resins obtained by tapping *Boswellia* trees. One of the main components of frankincense oil is boswellic acid, a component known to have anti-neoplastic properties. Research presented in the peer reviewed journal, *BMC Complementary and Alternative Medicine* found that Frankincense oil might represent an alternative intravesical agent for bladder cancer treatment.

HK Lin and his team, from the University of Oklahoma Health Sciences Center and Oklahoma City VA Medical Center, set out to evaluate frankincense oil for its anti-tumour activity in bladder cancer cells. The authors investigated the effects of the oil in two different types of cells in culture: human bladder cancer cells and normal bladder cells. The team found that frankincense oil is able to discriminate between normal and cancerous bladder cells in culture, and specifically kill cancer cells.

Within a range of concentration, frankincense oil suppressed cell viability in bladder transitional carcinoma J82 cells but not in UROtsa cells. Comprehensive gene expression analysis confirmed that frankincense oil activates genes that are responsible for cell cycle arrest, cell growth suppression, and apoptosis in J82 cells. However, frankincense oil-induced cell death in J82 cells did not result in DNA fragmentation, a hallmark of apoptosis.

Article: *Frankincense oil derived from *Boswellia carteri* induces tumor cell specific cytotoxicity*
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